DEMKIV, L.P.

USSR/Medicine - Endocrinology

Card 1/1 Pub. 22 - 56/56

Authors : Dyban, A. P., and Demkiv, L. P.

Title : About the goitrogenic effect of rhodanine (2-thion-thiazolidine-4)

Periodical : Dok. AN SSSR 99/5, 877-880, Dec 11, 1954

Abstract : The results obtained in studying the effect of rhodanine, which appears to be 2-thion-thiazolidine-4, on the morphology of the thyroid gland are presented. It was established that the goitrogenic reaction of the thyroid gland originates as result of intensified physiological action or as result of the increased amount of hypophysin produced by the thyrotropic hormone. The observed goitrogenic effect of rhodanine confirms the general supposition that rhodanine also affects the thyrotropic function of the hypophysis. Twenty-two references: 17-USSR and 5-USA (1943-1953). Illustrations.

Institution: State Medical Institute, Lvov

Presented by: Academician A. I. Abrikosov, July 29, 1954

DEMKIV, L. P. Cand Med Sci -- (diss) "Goitrogenic effect of rodanin (2-thiazolidon) and some of its derivatives." L'vov, 1957. 18 pp 21 cm. (L'vov State Med Inst. Chair of Histology and Embryology. Chair of Pathological Anatomy). 200 copies. (KL, 23-57, 116)

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DYBAN, A.P.; DEMKIV, L.P.; AVGUSTINOVICH, M.S.

Inhibition of implantation (diapause) in rats kept on a deficient saccharose diet. Dokl. AN SSSR 149 no.6:1453-1456 Ap '63. (MIRA 16:7)

1. L'vovskiy gosudarstvennyy meditsinskiy institut. Predstavleno akademikom I.I.Shmal'gauzenom.

(Diapause) (Sucrose)

DEMKIV, O.T.; SHEVCHUK, A.I.

Natural radioactivity of some cap fungi of the Cherno Gory.
Ukr. bot. zhur. 20 no.3:97-101 '63. (MIRA 17:9)

1. L'vovskiy nauchno-prirodovedcheskiy muzey AN UkrSSR.

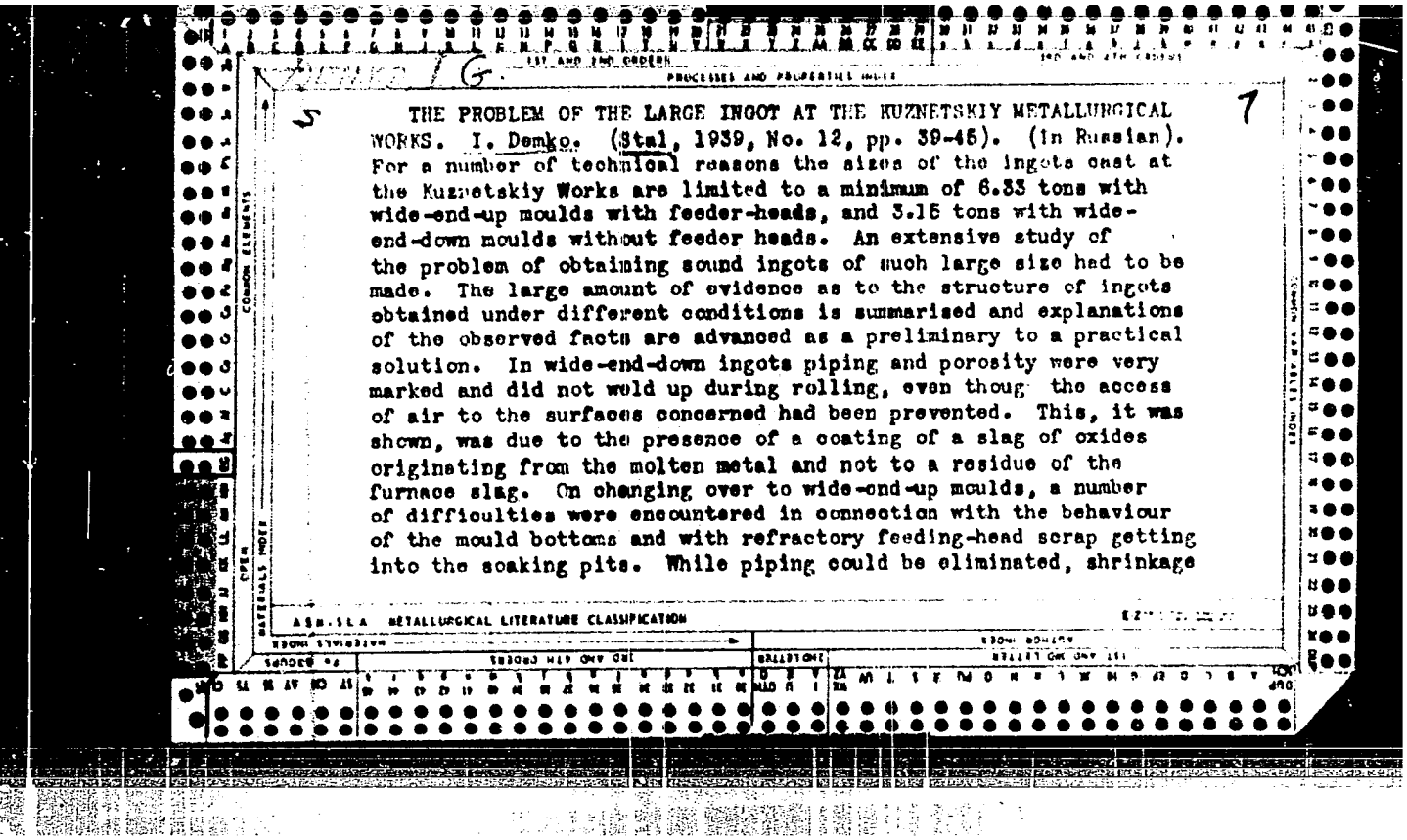
ALEKSANDROV, G.P.; DEMKIV, O.T.; SHEVCHENKO, Yu.V.; SHEREMET'YEV, S.Kh.

Flame-photometric determination of strontium in a methane-air flame using the SF-5 spectrophotometer. Ukr.khim.zhur. 29 no.6:623-627 '63. (MIRA 16:9)

1. Institut geologii goryuchikh iskopayemykh AN UkrSSR.
(Strontium--Spectra) (Flame photometry)

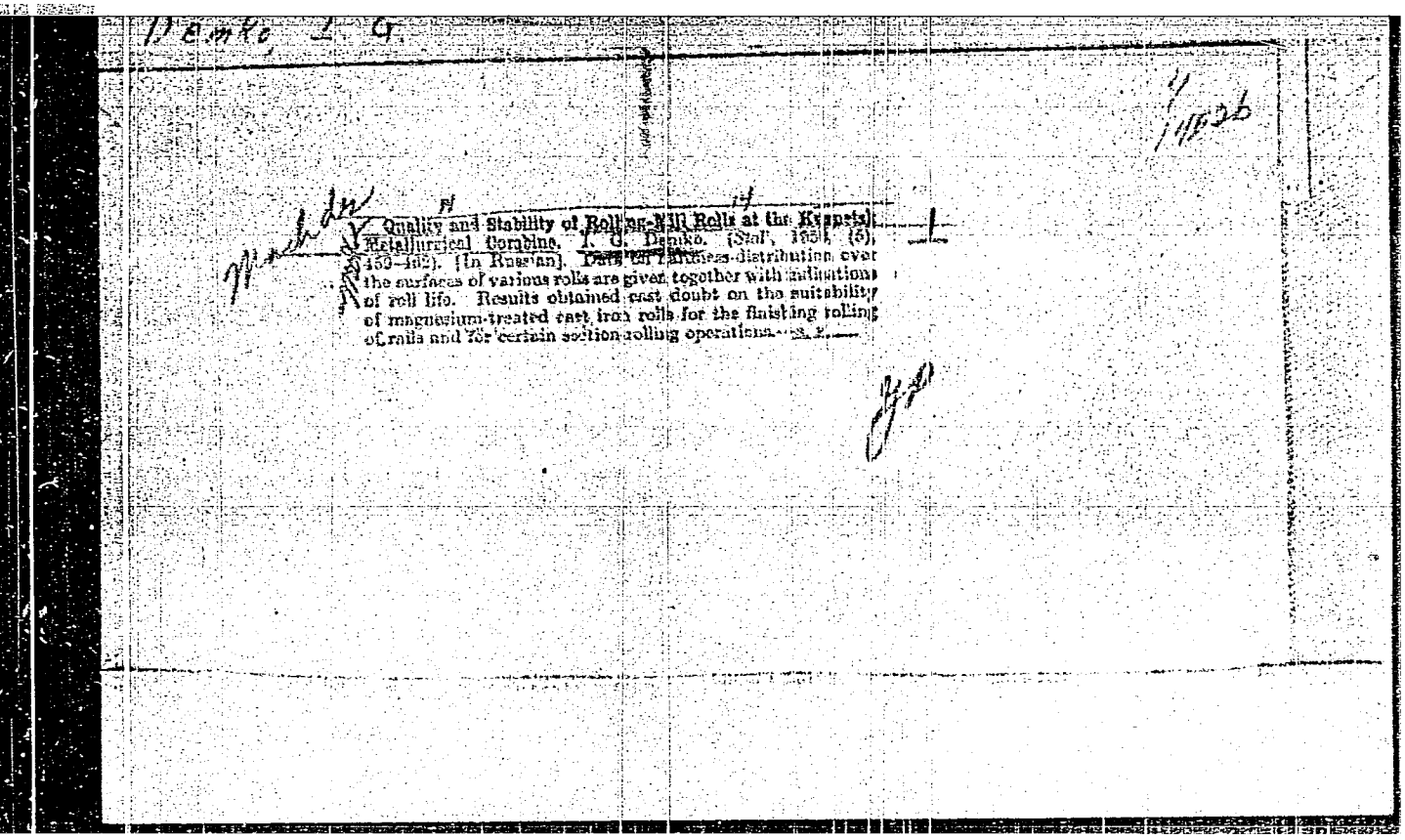
UPOR, Andre; DEMKO, Andre; [illegible], Laszlo

On the determination of urinary uranium content. Kiserletes Orvostudomany 12 no.1:91-94 F '60.
(URANIUM urine)



THE PROBLEM OF THE LARGE INGOT AT THE KUZNETSKIY METALLURGICAL WORKS. I. Demko. (Stal, 1939, No. 12, pp. 39-45). (In Russian). For a number of technical reasons the sizes of the ingots cast at the Kuznetskiy Works are limited to a minimum of 6.33 tons with wide-end-up moulds with feeder-heads, and 3.16 tons with wide-end-down moulds without feeder heads. An extensive study of the problem of obtaining sound ingots of such large size had to be made. The large amount of evidence as to the structure of ingots obtained under different conditions is summarised and explanations of the observed facts are advanced as a preliminary to a practical solution. In wide-end-down ingots piping and porosity were very marked and did not weld up during rolling, even thoug the access of air to the surfaces concerned had been prevented. This, it was shown, was due to the presence of a coating of a slag of oxides originating from the molten metal and not to a residue of the furnace slag. On changing over to wide-end-up moulds, a number of difficulties were encountered in connection with the behaviour of the mould bottoms and with refractory feeding-head scrap getting into the soaking pits. While piping could be eliminated, shrinkage

porosity continued to be troublesome. Sectioned ingots exhibited the following four zones: (1) A contaminated feeder-head zone; (2) a zone of sound metal: (3) an unsound zone showing segregation and shrinkage pores; and (4) a zone of sound metal at the bottom amounting to 50-60% of the whole. It is pointed out, incidentally, that the ingots obtained were not worse than those claimed as satisfactory by Gathmann (see Blast Furnace and Steel Plant, 1937, vol. 25, Feb., p. 204), but the requirements and the method of inspection (by making sulphur prints of finely ground surfaces) were more stringent at the Soviet works. A mechanism which would explain the above structural features of the ingots is suggested for the solidification process. This involves essentially the formation of the zone of columnar crystals growing from the mould walls into the interior and the precipitation from the liquid phase of austenite solid-solution crystals. These sink to the bottom of the square ingots, forming a heap having the shape of a truncated pyramid. The thickness of the zone of columnar crystals increases with the distance from the bottom of the ingot, reaching a maximum. The formation of the intermediate, third zone of unsoundness is explained by movement and constraint imposed on the residual melt by the two structural formations referred to. The effect on the above mechanism of a change in pouring temperature is indicated. The observations made on a large number of ingots and their interpretation lead the author to make a number of suggestions regarding mould design.



Quality and Stability of Roll-as-Mill Rolls at the Kramatorsk Metallurgical Combine. I. G. Denisko. (Stal', 1951, (6), 459–462). [In Russian]. Data on hardness distribution over the surfaces of various rolls are given together with indications of roll life. Results obtained cast doubt on the suitability of magnesium-treated cast iron rolls for the finishing rolling of rails and for certain section-rolling operations.—S. F.

DEMKO, L.

The profitability of breeding ducks.

p. 35 (Rolnicke Hlasy, Vol. 11, No. 9, Sept. 1957, Praha, Czechoslovakia)

Monthly Index of East European Accessions (EEAI) LC. Vol. 7, No. 2,
February 1958

NIKS,M.; BIRCAK,J.; DEMKO,M.; BACINSKY,M.

Evaluation of mechanical ventilation by the Tiffeneau test in children during puberty. Bratisl. lek. listy 2 no.10:583-589 '63.

1. Oddelenie klinickej patofyziologie pri Katedre experimentalnej patologie a farmakologie Lek.fak. Univ. Komenskeho v Bratislave (veduci katedry doc. MUDr.E.Barta, C.Sv.) a Katedra pediatrie I. Lek. fak. Univ. Komenskeho v Bratislave, (veduca: doc. MUDr.I.Jakubcova).

DEMKO, M.Ye., kand.med.nauk

Late results of the surgical treatment of cryptorchidism. Urologiia, 23 no.1:21-27 Ja-F '58. (MIRA 11:3)

1. Iz khirurgicheskogo otdeleniya (zav.-kandidat meditsinskikh nauk N.I. Mashtakov) Podol'skoy gorodskoy bol'nitsy i fakul'tetskoy khirurgicheskoy kliniki (zav.-prof. S.K.Solov'yev) Dnepropetrovskogo meditsinskogo instituta.

(CRYPTORCHIDISM, surg.
follow-up)

DEMKO, M.Ye., dotsent

Surgical anatomy of vessels of a horseshoe kidney. Kaz.med. zhur. 40 no.5:76-77 S-O '59. (MIRA 13:7)

1. Iz kafedry operativnoy khirurgii i topograficheskoy anatomii (zav. - prof. P.Ya. Il'chenko) Dnepropetrovskogo meditsinskogo instituta.

(KIDNEYS--ABNORMITIES AND DEFORMITIES)

DEMKO, M.Ye., dotsent

Role of Soviet researchers in the development of the study on the displaced testicle. Urologiia no.6:45-48 '64. (MIRA 18:11)

1. Kafedra operativnoy khirurgii i topograficheskoy anatomii (zav. - dotsent M.Ye.Demko) Dnepropetrovskogo meditsinskogo instituta.

DEMKO, Peter, inz.

"Basic methods of scientific thinking" by M. Wimmer.
Reviewed by Peter Demko. Tech praca 16 no.11:921 N '64.

DEKO V. Odbor pro mikrobiologii a epidemiologii Statniho zdravotnickeho ustavu. Plotenkova methoda haemaglutinace chripkoveho viru An influenza virus Haemagglutination method on porcelain plated Casopis lekaru ceskych, Prague 1950, 89/2 (53-55) Illus. 2

So: Medical Microbiology & Hygiene Section IV, Vol. 3, No. 7-12

(Branch Microbiology and Epidemiology State Health Inst. Prague)

DEMKO, Vladimir, (Lt. Col. MD) (Central Military Hospital In Prague)

Author of article, "Possibility of Active Immunization Against Poliomyelitis," discussing research conducted on possible immunization agents against the three types of infantile paralysis, using the polio virus as a starting material for preparation of the immunization agent.
(VZL, Feb 55)

SO: Sum. 600, 1 Aug. 1955,

CHEKMAREV, A.P.; RABINOVICH, S.N.; Prinimali uchastiye: KUS'MIN, V.P.; ZVONAREV, V.K.; DEMKO, V.M.

Investigating power conditions in the rolling of lightweight shaped sections on a 550mm. medium section mill. Izv. vys. ucheb. zav.; chern. met. 6 no.4:56-67 '63. (MIRA 16:6)

1. Dnepropetrovskiy metallurgicheskiy institut.
(Rolling mills)

DEMKO, Ye.B., sanitarnyy vrach; UPOROVA, G.I., laborant

Mercury poisoning in clinical conditions. Gig. i san. 21 no.4:53-55 Ap '56. (MLRA 9:7)

1. Iz Smolenskoy oblastnoy sanitarno-epidemiologicheskoy stantsii.
(ANTISEPTICS, MERCURIAL, poisoning,
ethylmercurochloride, case in child (Rus))
(POISONING,
same)

DENKL, Ye.B., vrach; UPOROVA, O.I., khimik

Training laboratory personnel of sanitation and epidemic stations. Gig. i san. 22 no.4:46-47 Ap '57. (MLRA 10:9)

1. Iz Smolenskoy oblastnoy sanitarno-epidemiologicheskoy stantsii
(TECHNOLOGY, MEDICAL, education,
(Rus))

DEMKO, E.B., UPOROVA, G.I.

Hygienic aspects of the Smolensk milk supply. Gig. i san. 23 no.8:78 Ag '58 (MIRA 11:9)

1. Iz Smolenskoy oblastnoy sanitarno-epidemiologicheskoy stantsii.
(SMOLENSK--MILK SUPPLY--HYGIENIC ASPECTS)

DEMKO, Ye.B., UPOROVA, G.I.

Conference of Smolensk Province public health employees. (MIRA 11:11)
Gig. i san. 23 no.9:91-93 S'58
(SMOLENSK PROVINCE--PUBLIC HEALTH)

DEMKO, Ye.B.; UPOROVA, G.I.; SHIRALKINA, M.D.

Clinical aspects of granosan poisoning. Pediatriia 36 no.2:74-76 F '59. (MIRA 12:4)

1. Iz Smolenskoy oblastnoy sanitarno-epidemiologicheskoy stantsii (glavnyy vrach A.V. Veselova) i kafedry fakul'tetskoy pediatrii (zav. - prof. P.A. Ponomareva) II Moskovskogo meditsinskogo instituta imeni N.I. Pirogova.

(CARBON TETRACHLORIDE, pois.
carbon tetrachloride-1,2-dichloroethane prep. pois. (Rus))
(ETHYL CHLORIDE, related cpds.
1,2-dichloroethane-carbon tetrachloride prep. pois. (Rus))
(ANTISEPTICS, MERCURIAL, poisoning,
ethylmercurochloride, in child (Rus))

DEMKO, Ye. B.

Cand Med Sci - (diss) "Endemic goiter in the Smolenskaya Oblast." Smolensk, 1961. 20 pp; (Ministry of Public Health RSFSR, Smolensk State Medical Inst); 250 copies; price not given;(KL, 5-61 sup, 202)

DEMKO, Ye.B.; LAKHTUROVA, F.V.

Some problems of water supply in Smolensk Province as related to the incidence of endemic goiter. Gig. i san. 26 no.9:82 S '61. (MIRA 15:3)

1. Iz Smolenskoy oblastnoy sanitarno-epidemiologicheskoy stantsii.

(SMOLENSK PROVINCE--GOITER)
(SMOLENSK PROVINCE--WATER SUPPLY)

DEMKOV, B. M., Engr

USSR/Metals - Cast Iron, Melting Apr 52

"Methods for Coke Conservation," G. M. Kogan, B. M. Demkob, Engineers, Moscow Automobile Plant imeni Stalin

"Litey Proizvod" No 4, pp 29,30

Discusses utilization of fine coke in cupola furnaces describing mechanized installation for coke sorting and conveyance to charging point. Suggests a number of measures for decreasing consumption of coke per ton of cast iron.

PA 213T101

DEMEOV, B. M.

Distr: 4E2b/4E2c

Naturally Alloyed Khililovo Cast Iron in Machine Construction. D. P. Glukhov, G. M. Kogan and B. M. Demkov. (Liteinoe Proizvodstvo, 1955, (9), 8-9). [In Russian]. The use of a cast iron containing 2·7–3·0% Cr and 0·8–1·0% Si for casting cylinder blocks is described. Permissible ranges of alloying elements for various conditions are given.—S. E.

EXCERPTA MEDICA Sec.11 Vol.10/11 Oto-Rhino-Laryngo Nov57

DEMKOV J.

2079. DEMKOV J. Otolaryngol. Klin. Fak. Nemocn., Košiciach. *Príspevok k náhodne objavenýmchronickým cudzím telesám v tracheobronchiálnom strome. Concerning the chronic manifestations of a foreign body in the tracheobronchial tree ČSL. OTOLARYNG. 1957, 6/3 (136-139)

Description of 3 cases of chronic foreign body in the tracheobronchial tree, which were diagnosed in the third symptomatic stage because of the presence of bronchopneumonia or lymphadenitis.

DEMKOV, J.

Unusual benign tumors in the region of the nose and nasal sinuses. Cesk. otolar. 7 no.1:18-21 Feb 58.

1. Otolaryngologicka klinika UK v Kosiciach, prednosta doc. Dr. Michal Suster.

(TELANGIECTASIS, case reports,
telangiectatic fibroma of nose (Cz))
(FIBROMA, case reports,
same)
(NASAL CAVITY, neoplasms,
telangiectatic fibroma & paranasal osteofibroma (Cz))
(OSTEOMA, case reports,
paranasal osteofibroma (Cz))

SUSTER, M., prof. dr., DrSc.; CSARIK, A.; HAVRILA, L.; KOVAL, J.; DEMKOV, J.; JABLONICKY S.; STOLINA, J.; SVATY, I.; VRZAL, J.; ZRUBEC, P.

Incidence of scleroma in eastern Slovakia. Cesk. otolaryng. 14 no.1:10-13 F'65.

1. Otoryngologicka klinika Lekarskej fakulty University P.J. Safarika v Kosiciach (prednosta: prof. dr. M. Suster, DrSc.) a ORL oddelenia Obvodniho ustavu narodniho zdravi, Presov, Kosice, Humenne, Spisska Nova Ves, Michalovce, Poprad a Roznava.

DYBAN, A. P., doktor med. nauk; DEMKOV, I. P., kand. med. nauk;
AVGUSTINOVICH, M. S. (L'vov)

Changes in β-basophils in varying proportions of the amount of thyrotropic hormone in the pituitary gland and the blood of white rats. Probl. endok. i gorm. no.6:33-42 '61. (MIRA 14:12)

1. Iz kafedry gistologii i embriologii (zav. - dotsent A. P. Dyban) L'vovskogo meditsinskogo instituta (dir. - prof. L. N. Kuzmenko)

(BLOOD CELLS) (PITUITARY HORMONES)

AUTHOR: Demkov, M.G. SOV/106-58-4-12/16

TITLE: (A Contribution) to the Problem of the Ideal Receiver (K voprosu ob ideal'nom priyemnike)

PERIODICAL: Elektrosvyaz', 1958, Nr 4, p 73 (USSR)

ABSTRACT: The formulae of the potential interference theory (Ref 1) assume fluctuation interference with normal distribution of probabilities. The author considers the properties required of an ideal receiver for interference with the distribution of probabilities as obtaining in English speech (Ref 2).
There are 2 references, 1 of which is Soviet and 1 English.

SUBMITTED: June 14, 1957

Card 1/1 1. Radio recievers--Interference 2. Radio receivers--Design

05378

AUTHOR: Demkov, M.G. SOV/106-59-8-10/12

TITLE: A Feature in Selecting the Optimum Conditions for Transmission of Discrete Information

PERIODICAL: Elektrosvyaz', 1959, Nr 8, pp 76 - 78 (USSR)

ABSTRACT: The author starts with Eqs (1), (2) and (3), obtained from Goldman's "Information Theory" (Ref 1). In these equations, the symbols used are as follows:

$H(j)$ is the entropy of a series of received symbols with unknown symbols at the input,

$H_i(j)$ is the conditional entropy of a series of received symbols with known symbols at the input,

P_i is the probability of transmission of symbol i,

P_j is the probability of reception of symbol j,

p_{ij} is the probability of reception of symbol j when the symbol i is transmitted.

From these equations, the value of the mean information per symbol for a binary code is as given in Eq (4). The values of the probabilities P_0 and P_1 are determined by the method of coding in the transmitter; the values of the probabilities p_{ij} depend on the characteristics of the signal and of the communication channel, and also

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A Feature in Selecting the Optimum Conditions for Transmission of Discrete Information

on the working regime of the receiver. If these factors are known, then, in principle, the optimum receiver regime to give maximum mean information per symbol can be found. If the received voltage over an interval of one transmitted symbol (ΔT) can be completely represented by a finite number n of discrete, mutually-independent "probes", then with each probe, the receiver forms the "correctness" ratio:

$$\frac{P_o \varphi_o(U)}{P_1 \varphi_1(U)}$$

where $\varphi_o(U)$ and $\varphi_1(U)$ are the probability densities for instantaneous values of the input voltage U for symbols 0 and 1. Then the logarithms of the n values of the ratio are integrated over the period ΔT

A Feature in Selecting the Optimum Conditions for Transmission of Discrete Information

giving Δn (Eq 5). For separating the symbols at the receiver output, a threshold level is necessary, corresponding to the value $\Delta n = 0$. Choice of this threshold value determines the optimum receiver regime and the maximum mean information per symbol for a given receiver and a given channel.

In some practical cases, the modulation method is fixed and correcting codes cannot be used, then the probabilities P_o and P_1 can be varied for optimum condition. For an isolated transmitter, the optimum ratio is:

$$P_o/P_1 = 1, \text{ i.e. } P_o = P_1 = 0.5 .$$

However, if statistical matching of the whole path is considered, then the optimum ratio may be different. It is possible to calculate this optimum ratio by using Eq (4) to find the limit function $I_c = f(P_o/P_1)$,

Card3/4 considering that for each value of P_o/P_1 the receiver

A Feature in Selecting the Otpimum Conditions for Transmission of Discrete Information

regime is chosen in accordance with Eq (5). An example is given. It is assumed that with transmission of the symbol 1 the transmitter generates a signal having approximately the property of white noise and an intensity of σ_c^2 and a uniform spectrum Δf. The transmission occurs in a channel having interference with a uniform spectrum over the band and an intensity σ_{cp}^2. It is shown that for maximum mean information per symbol, the following values should be chosen for $n = 50$ and $\sigma_c^2/\sigma_{cp}^2 = 0.5$, $P_o \approx 0.55$ and $P_1 \approx 0.45$; for $n = 2$ and σ_c^2/σ_{cp}^2, $P_o \approx 0.58$ and $P_1 \approx 0.42$.

There are 3 references, of which 2 are Soviet and 1 English. one of the Soviet references is translated from English.

SUBMITTED: February 5, 1959

Card 4/4

DEMKOV, S. P.

35542. Dermoidnyye Kisty I Teratomy Sredosteniya. V SB: Voprosy Grudnoy Khirurgii. T. 1 [illegible]., 1949, c. 229-36.

Letopis' Zhurnal'nykh Statey, Vol. 48, Moskva, 1949.

BARCHENKOV, A.G.; DEMKOV, Ye.A.; MAL'TSEV, R.I.; TUROVSKIY, L.M. (Voronezh)

Free vibrations of some frame-cantilever systems. Stroi. mekh. i rasch. soor. 4 no.6:44-49 '62. (MIRA 16:1)
(Vibration)

DEMKOV, Ye.D.

GLAZUNOV, Aleksandr Aleksandrovich; DEMKOV, Ye.D., redaktor; FRIDKIN, A.M., tekhnicheskiy redaktor

[Principles of the mechanics of overhead electric transmission lines] Osnovy mekhanicheskoi chasti vozdushnykh linii elektroperedachi. Moskva, Gos. energ. izd-vo. Vol.1. [Work and calculation of conductors and cables] Rabota i raschet provodov i trosov. 1956. 191 p.
(Electric lines--Overhead) (MLRA 10:3)

MARCHENKO, Ye.A., kand.tekhn.nauk; ROZOVSKIY, Yu.A., kand.tekhn.nauk; SHUR, S.S., kand.tekhn.nauk; KORSUNTSEV, A.V., kand.tekhn.nauk, red.; DEMKOV, Ye.D., red.; MEDVEDEV, L.Ya., tekhn.red.

[Series capacitors] Prodol'naia emkostnaia kompensatsiia linii elektroperedachi. Moskva, Gos. energ. izd-vo, 1957. 47 p. p. (MIRA 11:4)

1. ORGRES, trust, Moscow.
(Condensers (Electricity))

VUL'MAN, Georgiy L'vovich; DEMKOV, Ye.D., redaktor; MEDVEDEV, L.Ya., tekhnicheskiy redaktor

[Operational testing of generators at electric stations] Ekspluatatsionnye ispytaniia generatorov na elektrostantsiiakh. Moskva, Gos. energ. izd-vo, 1957. 79 p. (MLRA 10:3)
(Electric generators--Testing)

Demkov, Ye. D.

PHASE I BOOK EXPLOITATION 284

Soveshchaniye elektrikov po voprosu proyektirovaniya elektricheskoy chasti gidrostantsiy, Moscow, 1956

Novoye v proyektirovanii elektricheskoy chasti gidroelektrostantsiy (Materialy soveshchaniya po proyektirovaniyu i ekspluatatsii) (New Developments in the Design of Electric Equipment for Hydroelectric Power Plants (Data of the Conference on Design and Operation)) Moscow-Leningrad, Gosenergoizdat, 1957, 222 p. 4,500 copies printed.

Sponsoring agencies (of Conference): Vsesoyuznyy trest po proyektirovaniyu gidroelektrostantsiy i gidroelektrouzlov; Moskovskoye otdeleniye nauchno-tekhnicheskogo obschchestva energopromyshlennosti, Moskovskiy energeticheskiy institut.

Ed.: Demkov, Ye. D.; Tech. Ed.: Fridkin, A.M.; Ed. of the Collection: Kheyfits, M.E., Engineer.

PURPOSE: These collected reports are addressed to engineers engaged in the design, construction, operation and maintenance of electric power plants, as well as to students at power

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engineering and electrical engineering vuzes.

COVERAGE: A conference of electrical engineers engaged in the design, construction, operation and maintenance of hydroelectric power plants and electric power distribution systems was held in Moscow from May 16th to May 24, 1956. The conference was organized by Gidroenergoproyekt (All-Union Trust for the Design and Planning of Hydroelectric Power Plants and Developments) in collaboration with MONTOEP (Moscow Branch of the Scientific and Technical Society of the Electrical Industry) and the Moskovskiy energeticheskiy insitut (Moscow Power Engineering Institute). Several related design organizations, as well as the Ministries of the Electrical Industry, of Electric Power Plants and of Electric Power Plant Construction also participated. The reports in this collection reflect the latest views on the design and planning of the electrical equipment of hydroelectric stations and on their requirements for equipment. Special attention is given to problems of automation and remote control of stations and systems. These reports are concerned to a very great extent with the description and appraisal of considerable quantities of

New Developments in Design of Electric Equipment (Cont.) 284

Soviet-produced electrical equipment. There is a list of Soviet personalities and organizations which took part in the conference (pp. 205-215). In several of the reports reference is made to Soviet power engineers who have made important contributions in the field. There are 34 references, of which 27 are Soviet (pp. 157, 169, 197 and 205), three English, two Italian, one French and one Swedish (p. 196).

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AVAILABLE: Library of Congress (TK1081.S651956)

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DEMKOV, Ye.D

KONDAKHCHAN, Vaag Saakovich; DEMKOV, Ye.D., redaktor; MEDVEDEV, L.Ya., tekhnicheskiy redaktor

[Operation of transformers]. Ekspluatatsiia transformatorov. Izd.2-oe, perer. Moskva, Gos.energ. izd-vo, 1957. 303 p. (Electric transformers) (MLRA 10:7)

Demkov, Ye. D.

BERKOVICH, Mikhail Arnol'dovich; SEMENOV, Vladimir Aleksandrovich; DEMKOV, Ye.D., red.; VORONIN, K.P., tekhn.red.

[Principles of relay protection engineering and operation] Osnovy tekhniki i ekspluatatsii releinoi zashchity. Izd. 2-oe, dop. i perer. Moskva, Gos.energ.izd-vo, 1957. 366 p. (MIRA 11:2)
(Electric relays)

KAMINSKIY, Yevgeniy Abramovich; DEMKOV, Ye.D., red.; MEDVEDEV, L.Ya., tekhn.red.

[Electric wiring in apartments and how to handle it] Kvartirnaia elektroprovodka i kak s neiu obrashchat'sia. Moskva, Gos. energ. izd-vo, 1958. 94 p. (MIRA 12:2)
(Electric wiring, Interior)

FOTIN, V.P.; AKOPYAN, A.A.,red.; ANDRIANOV, K.A.,red.; BIRYUKOV, V.G.,glavnyy red.; BUTKEVICH, Yu.V.,zamestitel' glavnogo red.; GRANOVSKIY, V.L., red.; KALITVYANSKIY, V.I.,red.; KLYARFEL'D, B.N.,red.; KRAPIVIN, V.K., red.; TIMOFEYEV, P.V.,red.; FASTOVSKIY, V.G.,red.; TSEYROV, Ye.M., red.; SHEMAYEV, A.M.,red.; DEMKOV, Ye.D.,red.; FRIDKIN, A.M.,tekhn. red.

[Voltage increase on long a.c. lines during nonsymmetric short circuits to ground] Povysheniia napriazhenii v dlinnykh liniiakh peremennogo toka pri nesimmetrichnykh korotkikh zamykaniiakh na zemliu. Moskva, Gos.energ.izd-vo, 1958. 223 p. (Moscow. Vsesoiuznyi elektrotekhnicheskii institut. Trudy, no.64) (MIRA 12:2)
(Electric lines) (Short circuits)

Demkov, Ye. D.

KASATKIN, Aleksandr Sergeyevich; PERKALIN, Mikhail Aleksandrovich; DEMKOV, Ye.D., red.; FRIDKIN, A.M., tekhn.red.

[Electric engineering] Elektrotekhnika. Izd. 7., perer. Moskva, Gos.energ.izd-vo, 1958. 464 p. (MIRA 11:7)
(Electric engineering)

SLAVINCHINSKIY, Iona Solomonovich; KHROMCHENKO, Grigoriy Yefimovich; DEMKOV, Ye.D., red.; VORONIN, K.P., tekhn.red.

[Making holes and grooves in concrete] Probivka otverstii i borozd v betone. Moskva, Gos.energ.izd-vo, 1959. 39 p. (Biblioteka elektromontera, no.5) (MIRA 12:11)
(Drilling and boring machinery)

RYBIKIN, Boris Pavlovich; DENKOV, Ye.D., red.; DOLGOV, A.N., red.; YEZHKOV, V.V., red.; SMIRNOV, A.D., red.; USTINOV, P.I., red.; FAYERMAN, A.L., red.; LARIONOV, G.Ye., tekhn.red.

[Concealed electric wiring] Skrytye elektroprovodki. Moskva, Gos.energ.izd-vo, 1959. 38 p. (Biblioteka elektromontera, no.9). (MIRA 13:6)

(Electric wiring)

KARPOV, Fedor Fedorovich; DEMKOV, Ye.D., red.; DOLGOV, A.N., red.; YEZHKOV, V.V., red.; SMIRNOV, A.D., red.; USTINOV, P.I., red.; LARIONOV, G.Ye., tekhn.red.

[How to select the correct diameter of wires and cables] Kak vybrat' sechenie provodov i kabelei. Moskva, Gos.energ. izd-vo, 1959. 47 p. (Biblioteka elektromontera, no.1) (MIRA 13:1)

(Electric conductors)

IL'INSKIY, Nikolay Fedotovich; DEMKOV, Ye.D., red.; LARIONOV, G.Ye., tekhn.red.

[Calculation and choice of resistances for electric motors] Raschet i vybor soprotivlenii dlia elektrodvigatelei. Moskva, Gos.energ.izd-vo, 1959. 47 p. (Biblioteka elektromontera, no.13). (MIRA 13:5)

(Electric motors) (Electric resistance)

KAMINSKIY, Yevgeniy Abramovich; DEMKOV, Ye.D., red.; VCHERASHNIY, R.P., red.; LARIONOV, G.Ye., tekhn.red.

[What should be known regarding the insulation of the operating current circuits] Chto nushno znat' ob izoliatsii tsepei operativnogo toka. Moskva, Gos.energ.izd-vo, 1959. 62 p. (Biblioteka elektromontera, no.8). (MIRA 13:3)
(Electric insulators and insulation)

SMIRNOV, L.A., red.; DEMKOV, Ye.D., red.; BORUNOV, N.I., tekhn.red.

[What must be known about using electric power in the household] Chto nado znat' o pol'zovanii elektroenergiei v bytu. Moskva, Gos.energ.izd-vo, 1959. 94 p. (MIRA 13:6)

1. Moskovskoye rayonnoye upravleniye energeticheskogo khozyaystva, Moscow.
(Household appliances, Electric) (Electricity)

MYASKOVSKIY, Izrail' Grigor'yevich; LEVI, S.S., kand.tekhn.nauk, retsenzent; PARFENT'YEV, N.F., inzh.-prepodavatel'; DEMKOV, Ye.D., inzh., nauchnyy red.; TYUTYUNIK, M.S., red.; GILENSON, P.G., tekhn.red.

[Electric equipment of building materials plants] Elektrooborudovanie zavodov stroitel'nykh materialov. Moskva, Gos.izd-vo lit-ry po stroit., arkhit. i stroit.materialam, 1959. 232 p. (MIRA 12:4)

1. Nauchno-issledovatel'skiy institut organizatsii, mekhanizatsii i tekhnicheskoy pomoshchi stroitel'stvu Akademii stroitel'stva i arkhitektury SSSR (for Levi). 2. Dneprodzerzhinskiy industrial'nyy tekhnikum (for Parfent'yev).

(Building materials industry--Electric equipment)

MININ, Gleb Petrovich; DEMKOV, Ye.D., red.; LARIONOV, G.Ye., tekhn.red.

[Operation of electric meters] Ekspluatatsiia elektroizmeritel'nykh priborov. Moskva, Gos.energ.izd-vo, 1959. 319 p. (MIRA 12:5)
(Electric meters)

BAPTIDANOV, L.N.; TARASOV, V.I.; DEMKOV, Ye.D., red.; LARIONOV, G.Ye., tekhn.red.

[Electric equipment of electric power plants and substations; in 2 volumes] Elektrooborudovanie elektricheskikh stantsii i podstantsii; v dvukh tomakh. Izd.3, perer. Moskva, Gos.energ.izd-vo. Vol.2. [Diagrams for connections. Auxiliary equipment. Distributing equipment. Checking, control, and signaling. Grounding.] Skhemy elektricheskikh soedinenii; Sobstvennye nuzhdy; Raspredelitel'nye ustroistva; Kontrol', upravlenie i signalizatsiia; Zazemlenie. 1959. 320 p. (MIRA 13:4)
(Electric power plants) (Electric substations)

LARIONOV, Vladimir Petrovich; DEMKOV, Ye.D., red.; BORUNOV, N.I., tekhn.red.

[Protection of dwellings and industrial structures from lightning] Zashchita zhilykh domov i proizvodstvennykh sooruzhenii ot molnii. Moskva, Gos.energ.izd-vo, 1960. 31 p. (Biblioteka elektromontera, no.15). (MIRA 13:8)

(Lightning protection)

BALUYEV, Vladimir Konstantinovich; DEMKOV, Ye.D., red.; BORUNOV, N.I., tekhn.red.

[Safety rules in operating portable electric equipment] Tekhnika bezopasnosti pri ekspluatatsii perenosnykh elektroustanovok. Moskva, Gos.energ.izd-vo, 1960. 31 p. (Biblioteka elektromontera. no.31). (MIRA 14:1)

(Electric apparatus and appliances--Safety measures)

LIVSHITS, David Solomonovich; DEMKOV, Ye.D., red.; KASATKIN, A.S., red.; VORONIN, K.P., tekhn.red.

[Heating of wires and fuse protection in electric networks up to 1000 volts] Nagrev provodnikov i zashchita predokhraniteliami v elektrosetiakh do 1000 v. Moskva, Gos.energ.izd-vo, 1959. 37 p. (Biblioteka elektromontera, no.6). (MIRA 14:1)

(Electric networks) (Electric protection)

KHOMYAKOV, Mikhail Vasil'yevich; YAKOBSON, Il'ya Abramovich; DEMKOV, Ye.D., red.; PAVLOVA, T.I., tekhn.red.

[Thermit welding of multiple wire conduits for electric distribution lines and substations] Termitnaia svarka mnogoprovolochnykh provodov linii elektroperedachi i podstantsii. Moskva, Gos.energ. izd-vo, 1960. 37 p. (Biblioteka elektromontera, no.23). (MIRA 13:11)

(Electric conduits--Welding)

DEMKOV, Ye.D., red.; BORUNOV, N.I., tekhn. red.

[Instructions for fitting bolted busbar joints and connecting them to the contact wires of VI-3-57 MS RSFSR apparatus] Instruktsiia po montazhu boltovykh soedinenii shin i prisoedinenii ikh k kontaktnym vyvodam apparatov VI-3-57 MS RSFSR. Moskva, Gos. energ. izd-vo, 1960. 45 p. (MIRA 14:5)

1. Russia (1917- R.S.F.S.R.) Glavnoye upravleniye po proizvodstvu elektromontazhnykh rabot.
(Electric connectors) (Bus conductors (Electricity))

KLYUYEV, Sergey Aleksandrovich; DEMKOV, Ye.D., red.; BORUNOV, N.I., tekhn.red.

[How to calculate the electric lighting of industrial buildings] Kak rasschitat' elektricheskoe osveshchenie proizvodstvennogo pomeshcheniia. Moskva, Gos.energ.izd-vo, 1960. 45 p. (Biblioteka elektromontera, no.22). (MIRA 13:11)
(Factories--Lighting)

APTOV, Iosif Solomonovich; KHOMYAKOV, Mikhail Vasil'yevich; DEMKOV, Ye.D., red.; BORUNOV, N.I., tekhn.red.

[Maintenance of insulating oil] Ukhod za izoliatsionnym maslom. Moskva, Gos.energ.izd-vo, 1960. 70 p. (Biblioteka elektromontera, no.27). (MIRA 14:6)
(Insulating oils)
(Electric transformers—Maintenance and repair)

ZALYSHKIN, Mikhail Denisovich; DEMKOV, Ye.D., red.; BORUNOV, N.I., tekhn.red.

[Choice of transformers in electric power systems] Vybor transformatorov v energeticheskikh sistemakh. Moskva, Gos. energ.izd-vo, 1960. 93 p. (MIRA 13:11)
(Electric substations) (Electric transformers)

BUKHARIN, Yevgeniy Mikhaylovich; LYALIN, Feliks Isayevich; SANDLER, Polina Yevseyevna, SHLYAPIN, Igor' Andreyevich; ROKOTYAN, S.S., red.; DEMKOV, Ye.D., red.; BORUNOV, N.I., tekhn. red.

[Survey and comparison of foreign standards for designing the structural section of electric power transmission systems] Obzor i sravnenie zarubezhnykh norm na proektirovanie konstruktivnoi chasti linii elektroperedachi. Pod obshchei red. S.S. Rokotiana. Moskva, Gos. energ. izd-vo, 1960. 143 p. (MIRA 14:5)

(Electric power distribution)

BAPTIDANOV, Lev Nikolayevich; TARASOV, Vladimir Il'ich; DEMKOV, Ye.D., red.; ARANOV, P.M., tekhn.red.

[Electric equipment of electric power plants and substations in two volumes] Elektrooborudovanie elektricheskikh stantsii i podstantsii v dvukh tomakh. Moskva, Gos.energ.izd-vo. Vol.1. [Basic electric equipment of electric power plants and substations] Osnovnoe elektrooborudovanie elektricheskikh stantsii i podstantsii. Izd.3., perer. 1960. 408 p. (MIRA 13:6)
(Electric power plants) (Electric substations)

MYASKOVSKIY, Izrail' Grigor'yevich; DEMKOV, Ya.D., red.; KARNEYEV, V.A., red.izd-va; VORONINA, R.K., tekhn. red.

[Automation of production processes and measuring instruments] Avtomatizatsiia proizvodstvennykh protsessov i kontrol'no-izmeritel'nye pribory. Moskva, Vysshaia Shkola, 1963. 357 p. (MIRA 17:1)
(Automation) (Measuring instruments)

DEMKIN, Yu.I.

Formation of brittle transcrystallite cracks on the boundaries of twins and molybdenum grains. Fiz. met. i metalloved. 12 no.2:291-292 Ag '61. (MIRA 14:9)

1. Institut kachestvennykh staley TSentral'nogo nauchno-issledovatel'skogo instituta chernoy metallurgii.
(Creep of molybdenum)
(Crystal lattices)

ACCESSION NR: AT4013930 S/2659/63/010/000/0076/0080

AUTHOR: Demkin, Yu. I.; Estulin, G. V.

TITLE: The structure of the intergranular boundaries of recrystallized molybdenum

SOURCE: AN SSSR. Institut metallurgii. Issledovaniya po zharoprochny*m splavam, v. 10, 1963, 76-80

TOPIC TAGS: molybdenum, recrystallized molybdenum, molybdenum crystal structure, forged molybdenum, tempered molybdenum, polycrystalline molybdenum

ABSTRACT: One of the deficiencies of molybdenum as a construction material is its brittleness at temperatures around 20C. The area of low-temperature brittleness of polycrystalline molybdenum can be reduced by cold deformation. There is as yet no convincing explanation, however, of the different tendencies toward brittle failure of forged and tempered molybdenum. In this paper, the authors studied the structural changes in the grain boundaries when tempering massive forged molybdenum samples. The results of the analysis of the recrystallized molybdenum were compared with previously published data (Yu. I. Demkin, G. V. Estulin. Sbornik trudov in-ta kachestvenny*kh staley TsNIIChM. Metallurgizdat, 1962, p. 156) relating to forged material. For this purpose, a study was made of the brittle fractures of impact samples of cast molybdenum, with small admixtures of zirconium

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ACCESSION NR: AT4013930

and titanium, recrystallized for 1 hour at 2000C. Failure of the samples occurred at temperatures of 20-300C. The fractures were electrolytically etched in a 5% solution of H_2SO_4 in methyl alcohol. The authors concluded that recrystallization in massive molybdenum samples leads to a sharp increase in the disorientation angles of adjacent grains and to an increase in the tendency toward brittle failure. In forged molybdenum, as a result of the deformation texture, the majority of the grains are located in a close crystallographic orientation, while in recrystallized molybdenum granular disorientation is great and the probability that individual crystallites will be found in an orientation most favorable for the development of brittle failure is greater. Brittle fissures in polycrystalline molybdenum develop only at the boundaries of twins and grains. It is probable that the local stress concentration, necessary for the formation of a fissure, does not develop at the small-angle boundaries of forged molybdenum. Orig. art. has: 4 figures.

ASSOCIATION: Institut metallurgii AN SSSR (Institute of Metallurgy AN SSSR)

SUBMITTED: 00 DATE ACQ: 27Feb64 ENCL: 00

SUB CODE: ML NO REF SOV: 004 OTHER: 008

Card 2/2

DEMKOV, Yu. N.

Quantum mechanical computation of the probability of charge exchange in collisions. Uch. zap. LGU no.146:74-100 '52. (MIRA 11:3)
(Quantum theory) (Collisions (Nuclear physics))

DEMKOV, Yu.N.

Variational principles and the virial theorem in problems of continuous spectra in quantum mechanics. U.S. Atomic Energy Comm., Natl. Sci. Foundation, Wash. D.C. NSF-tr-21, 4 pp. '53 [Translated from Doklady Akad. Nauk S.S.S.R. 89, 249-52 '53].
(CA 47 no.22:11948 '53)

1. A.A.Zhdanov State Univ., Leningrad.

DEMKOV, Yu. N.

"Variational Principles in the Collision Therapy." Cand Phys-Math Sci, Leningrad State U, Leningrad, 1954. (RzhFiz, Nov 54)

Survey of Scientific and Technical Dissertations Defended at USSR Higher Educational Institutions (11)

SO: Sum. No. 521, 2 Jun 55

DEMKOV, Yu. N.

USSR/Nuclear Physics - Isotropic oscillator FD-726

Card 1/1 : Pub 146-14/18

Author : Demkov, Yu. N.

Title : Symmetry group of an isotropic oscillator

Periodical : Zhur. eskp. i teor. fiz., 26, p 757, Jun 1954

Abstract : Letter to editor. Analyzes degeneration of energy levels in Coulomb field as presented by V. A. Fok (ZS f. Phys. 98,145 (1935)). Gives an example of such a physical system, of light quanta in vacuo. A more detailed publication on subject will appear in "Vestnik Leningradskogo Universiteta." One reference, mentioned.

Institution : Leningrad State University

Submitted : October 16, 1952

DEMKOV, Yu. N.

62 The principle of detailed balance in quantum mechanics and some identities for the scattering amplitudes in collision theory. Yu. N. Demkov (A. A. Zhdanov State Univ., Leningrad). *Doklady Akad. Nauk S.S.S.R.* 97, 1033-6 (1954).—The principle of detailed balance is derived from the condition that the function $\int \varphi_2(\hat{H} - V(r))\,\varphi_1\,d\tau$ ($\hat{H}$ is energy operator, $V(r)$ potential energy, $d\tau$ vol. element) is symmetrical with regard to the wave functions of the initial state, φ_1, and of the final state, φ_2. Identities for the scattering amplitudes are further derived from this function, and applied to inelastic scattering of electrons by atoms.

R. Gova

DEMKOV, Yu.N.

Causality in quantum mechanics. Vest.Len.un.11 no.22:5:11 '56.
(Quantum theory) (MLRA 10:2)

DEMKOV, Yu. N.

AUTHORS: Demkov, Yu.N., Shepelenko, F.P. 56-6-25/47

TITLE: The Connection Between the Hulthén and Kohn Methods in the Theory of Collisions (Svyaz' mezhdu metodami Khyol'tena i Kona v teorii stolknoveniy)

PERIODICAL: Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, 1957, Vol. 33, Nr 6(12), pp. 1483-1487 (USSR)

ABSTRACT: The present paper investigates several varieties of direct methods of variation for the determination of the phase of the radial wave function. The equation for the determination of the phase in the variation method is:

$$\psi''(r) + (k^2 - V)\psi(r) = 0; \quad \psi(0) = 0, \quad \psi|_{r \to \infty} \sim A \sin(kr + \eta).$$

The variation principle for this problem can be written down in the following form:

$$\delta J = \delta \int_0^\infty \psi(r)((d^2/dr^2) + k^2 - V)\psi(r)\, dr = -A^2 k\, \delta\eta$$

By inserting a trial function $\tilde{\psi}(r)$ into the functional it is possible, by means of the variation principle, to derive a system of equations for the determination of the parameters a_i. This system of equations can be constructed in an ambiguous manner. First, the authors in-

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vestigated the most simple, but very important case $\tilde{\psi}(r) = \sum_{i=1}^{n} \alpha_i \varphi_i(r)$. The functional then is a quadratic form with respect to α_i, and the corresponding variation principle can be written down in the form: $\delta J = k(\alpha_2 \delta\alpha_1 - \alpha_1 \delta\alpha_2)$. The equations for the determination of the coefficients $\alpha_1, \ldots, \alpha_n$ are written down. The condition for the existence of trivial solutions of the system is, in general, not satisfied. However, by eliminating one of the equations of the system, the system can be made soluble, and various formulations of the variation principle can be obtained. This is discussed in detail for Hulthen (Khyul'ten) and Kohn (Kon) methods. The results obtained by means of these two methods agree if certain equations, which are mentioned here, are compatible. The authors then endeavor to find out to what extent the integral identity resulting from the variation principle must be satisfied in the case of the trial functions obtained here. In the computation of the phase by the Kohn method this integral identity is automatically satisfied. Verification of the satisfying of integral identity is equivalent to a

The Connection Between the Hulthén and Kohn Methods in the Theory of Collisions

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direct comparison of the results obtained by computing the phase according to the Kohn and Hulthen methods, and is therefore not an independent criterion for the correctness of the variation computation. As an example the authors computed the phase η for the scattering of electrons through the static field of a hydrogen atom with $V = -2(1 + 1/r)e^{-2r}$. There are 1 table and 4 references, 1 of which is Slavic.

ASSOCIATION: Leningrad State University (Leningradskiy gosudarstvennyy universitet)

SUBMITTED: May 30, 1957

AVAILABLE: Library of Congress

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16(1); 24(5) PHASE I BOOK EXPLOITATION SOV/1919

Demkov, Yuriy Nikolayevich

Variatsionnyye printsipy v teorii stolknoveniy (Variational Principles in the Theory of Collisions) Moscow, Fizmatgiz, 1958. 168 p. 6,000 copies printed.

Ed.: Yu.V. Novozhilov; Tech. Ed.: R.G. Pol'skaya.

PURPOSE: This book is intended for mathematicians and physicists interested in certain variational principles connected with the theory of collisions.

COVERAGE: The author studies variational principles almost entirely from the point of view of stationary problems. No attention is given to the application of variational principles in relativistic quantum mechanics and field theory, although many of the results obtained are of a very general nature. Some of the results are published for the first time in this book. The book may be considered as a supplement to the

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widely known work by Mott and Massey on the theory of collisions. The author thanks V.A. Fok, M.G. Veselov, Yu.V. Novozhilov, M.I. Petrashen', P.P. Pavinskiy, F.P. Shepelenko, L.D. Faddeyev, and G.F. Drukarev for help in preparing the book. There are 75 references: 24 Russian, 46 English, 4 Swedish, and 1 French.

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24(5)
AUTHOR: Demkov, Yu. N.

SOV/54-58-4-4/18

TITLE: Virial Theorem in the Theory of Collisions (Teorema viriala v teorii stolknoveniy)

PERIODICAL: Vestnik Leningradskogo universiteta. Seriya fiziki i khimii, 1958, Nr 4, pp 34-41 (USSR)

ABSTRACT: As was shown by V. A. Fok already in 1930 (Ref 1), the virial theorem can be best carried out by use of the variation principle and the variation of the scale. According to this view, various problems connected with the virial theorem in the theory of collisions are discussed in detail in the present paper. The one-dimensional problem is obtained as the simplest formulation of the theorem when a usual phase equation is discussed. Therefrom and according to the spread by the center of forces (according to Ref 2) the formulation for the virial theorem is obtained. The virial theorem for collisions of composed systems and the generalization of the principle of variations is formulated by the problem of electron scattering by hydrogen atoms. This is done on the basis of the Schrödinger equation of this case in atomic units. From the application of the principle of

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variations to the functional of the Schrödinger equation (the case of insufficient electron energy for ionization is discussed here, which is less complicated) a virial theorem results which, however, does not lead back to the initial functions. By extending the functional with the class of varying functions the initial function is obtained again due to the principle of variations and the variation of the scale. Further, the virial theorem is investigated with fields which have Coulomb nature in the infinite, wherein the initial equation (1) contains the Coulomb term in the potential in addition. This term does not change the theorem because it does not change the asymptotic form of the wave function at large distances from the nucleus. Further, some identities connected with the virial theorem are discussed, which, however, were already investigated by other authors (Gel'fand and Levitan (Ref 5) for the discrete spectrum and Newton (Ref 6) for the continuous spectrum). According to the results the virial theorem may be formulated for any problems of the theory of collisions; if only the principle of variations and the variation of the scale are employed, the virial theorem must be complied with in any case if the phases, amplitude scattering and wave functions were determined by direct measures

within a limited class of functions in which the scale variation is reliable. There are 8 references, 5 of which are Soviet.

SOV/51-4-6-1/24

AUTHORS: Demkov, Yu. N., Meygauz, M.G. and Senyukov, R.V.

TITLE: Ground-State Energy of Helium (Energiya osnovnogo sostoyaniya geliya)

PERIODICAL: Optika i Spektroskopiya, 1958, Vol. IV, Nr 6, pp 709-714 (USSR)

ABSTRACT: The problem of finding energy levels for a helium atom in the non-relativistic approximation reduces to finding of stationary values of a certain functional J. The functional J has a lower bound. Its smallest extremal value λ is the value required and it determines the ground-state energy. The problem was solved by the Ritz method which gives an approximation for the extremal eigenvalue. This eigenvalue is always on the energy spectrum side. Applying this method to the J functional, an approximate energy value L is found which is the upper bound for the true eigenvalue λ. The system of functions used in the Ritz method was the same as in Refs 1, 2. The lower bound for λ was found using the Maehly method (Ref 5). The calculations were made using the BESM computer.

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Approximate values of the ground-state energy above and below the true eigenvalue were found. They are given as:
$-2.9040855 < \lambda < -2.9037202$. There are 1 appendix and 9 references, 5 of which are American, 1 English, 1 Swiss, 1 Soviet and 1 mixed (translation and German).

ASSOCIATION: Leningradskiy Gosudarstvennyy Universitet; Vychislitel'nyy Tsentr AN SSSR (Leningrad State University; Computing Centre, Academy of Sciences of the U.S.S.R.)

SUBMITTED: July 10, 1957

SOV/56-34-3-27/55

AUTHOR: Demkov, Yu. N.

TITLE: On the Symmetry of the Coordinate Wave Function of a Many-Electron System (O simmetrii koordinatnoy volnovoy funktsii mnogoelektronnoy sistemy)

PERIODICAL: Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, 1958, Vol. 34, Nr 3, pp. 714-716 (USSR)

ABSTRACT: The present work investigates the connection between the two main methods for the construction of the wave function of a many-electron system that is to say the group-theoretical method and the method by Fok. In the energy operator of an n-electron system the coordinate-variables and the spin variables can be separated the spin contribution H_s of the energy operator besides, being spherically symmetric:

$$H = H_o (1,2,\ldots,n) + H_s (\sigma_1,\sigma_2, \ldots, \sigma_n).$$

If these two conditions are satisfied the complete wave function can be constructed which satisfies the Pauli-principle and which is an eigenfunction of the operator of

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the square $\vec{S}^2$ of the total spin, when the coordinate eigenfunction $\Psi(1,2,\ldots,n)$ of the operator H_o and the spin eigenfunction $\chi(\sigma_1,\sigma_2,\ldots,\sigma_n)$ of the operator H_s are known. Such a construction can be carried out either by means of the group theory or by means of a method proposed by Fok (Ref 2). In both methods the coordinate function and the spin function must satisfy certain symmetry conditions with respect to the exchange of the arguments. Obviously both methods must be equivalent to each other and therefore there must be a connection between the two symmetry conditions. According to the group theory the coordinate of the wave function must be determined by a Young (Yung) scheme with two columns. Then the function with the desired symmetry can be obtained by the corresponding symmetrizations from any function. The Young operator is described in detail. In the Fock (Fok) method the coordinate wave must meet the following three demands: 1.- Antisymmetry with respect to the variables 1,2...,k; 2) Antisymmetry with respect to the variables k+1,k+2,...,n; 3) Cyclic symmetry: The operator